NAAQS Update - Monitoring

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Region 4 Monitoring Meeting
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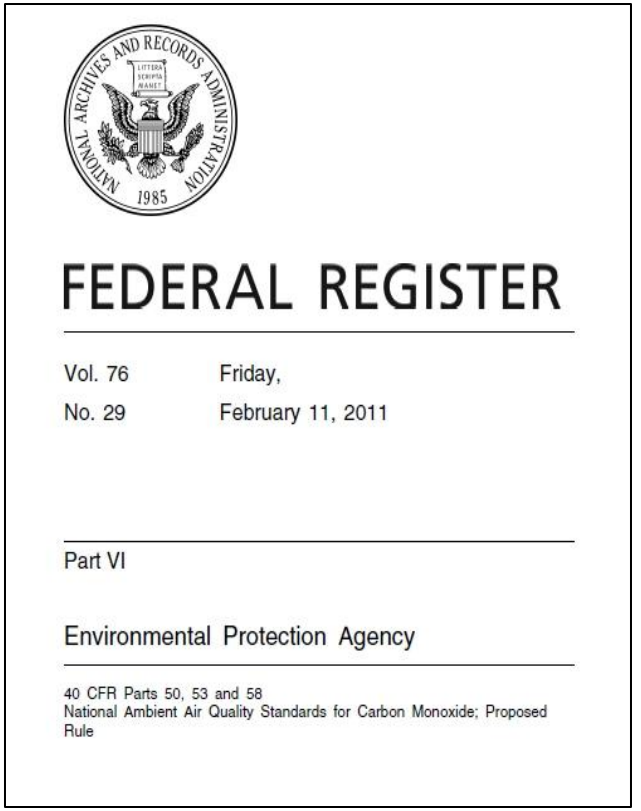
NAAQS Update – Monitoring Implications

- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Sulfur Dioxide (SO_2)
- Lead (Pb)
- Ozone (O_3)
- PM
- AQS Reporting
- NCore

CO – Notice of Proposed Rulemaking

- Proposal signed January 28th, 2011
- Published in the Federal Register on February 11th, 2011 (http://www.epa.gov/ttn/naaqs/standards/co/s_co_cr_fr.html)
- Public comment period closed April 12th, 2011
- NAAQS proposed to be retained, however, EPA proposed minimum monitoring requirements for CO monitors near heavily trafficked roads and revised siting criteria
- Federal Reference language was updated
  - EPA did not require the use of trace-level instruments
- Signature by August 12, 2011 (court ordered)



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Part VI

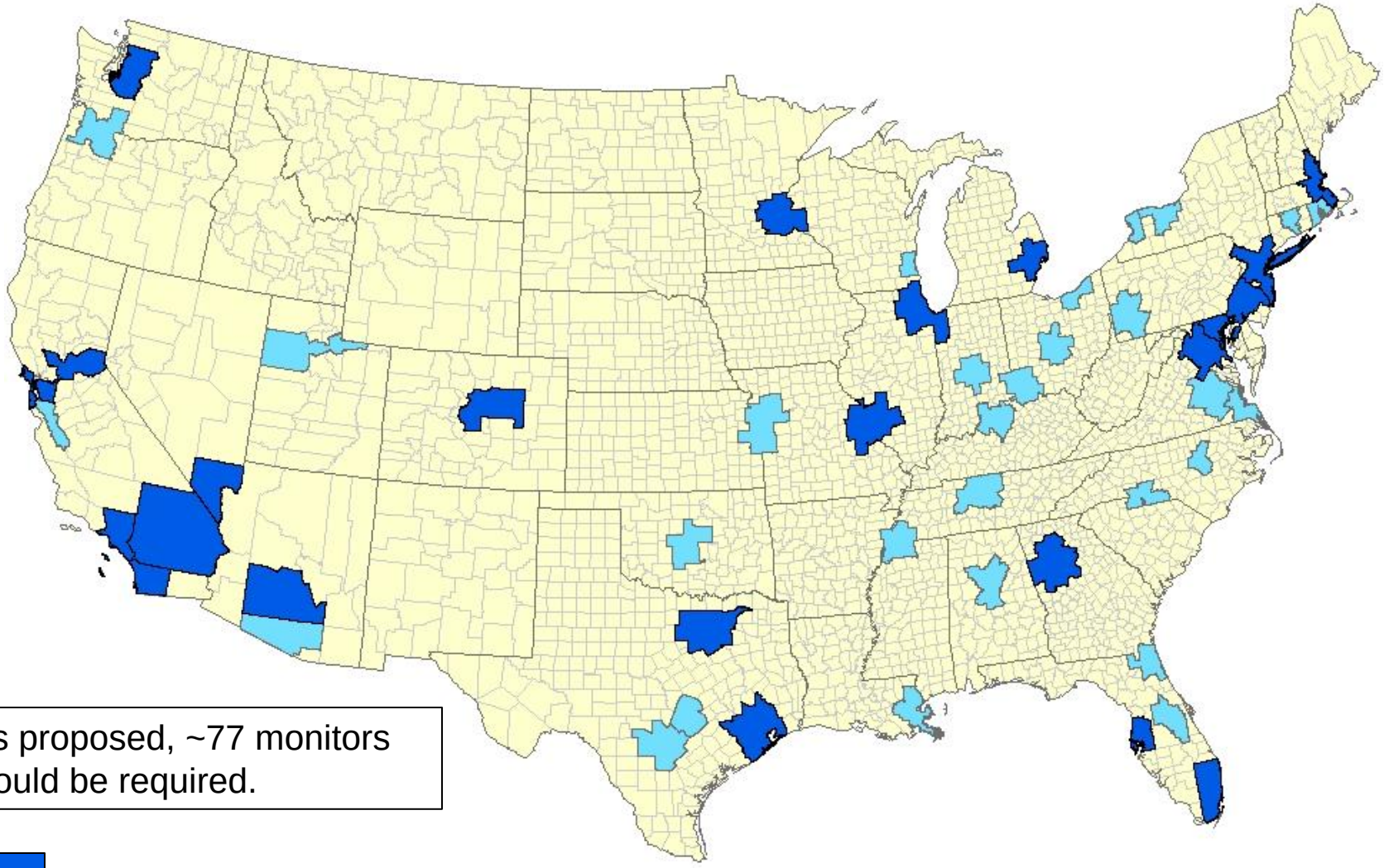
Environmental Protection Agency

40 CFR Parts 50, 53 and 58
National Ambient Air Quality Standards for Carbon Monoxide; Proposed Rule

CO – Proposed Monitoring Requirements

- Proposal calls for CO monitors to be co-located with any required near-road NO_2 monitor in any Core Based Statistical Area (CBSA) with 1 million or more persons.
- Would require approximately 77 monitors within 53 CBSAs
- Area-wide monitoring objectives addressed by NCore CO monitors
- Annual monitoring plans proposed to be due July 1, 2012 (matches NO_2)
- Network proposed to be operational January 1, 2013 (matches NO_2)
- Regional Administrators are proposed to have authority to require additional monitors on case-by-case basis (working with States)

Proposed Carbon Monoxide Monitoring Revisions Would Place Monitors Near Major Roads in Large Urban Areas



As proposed, ~77 monitors would be required.

24 urban areas would need 2 monitors

29 urban areas would need 1 monitor

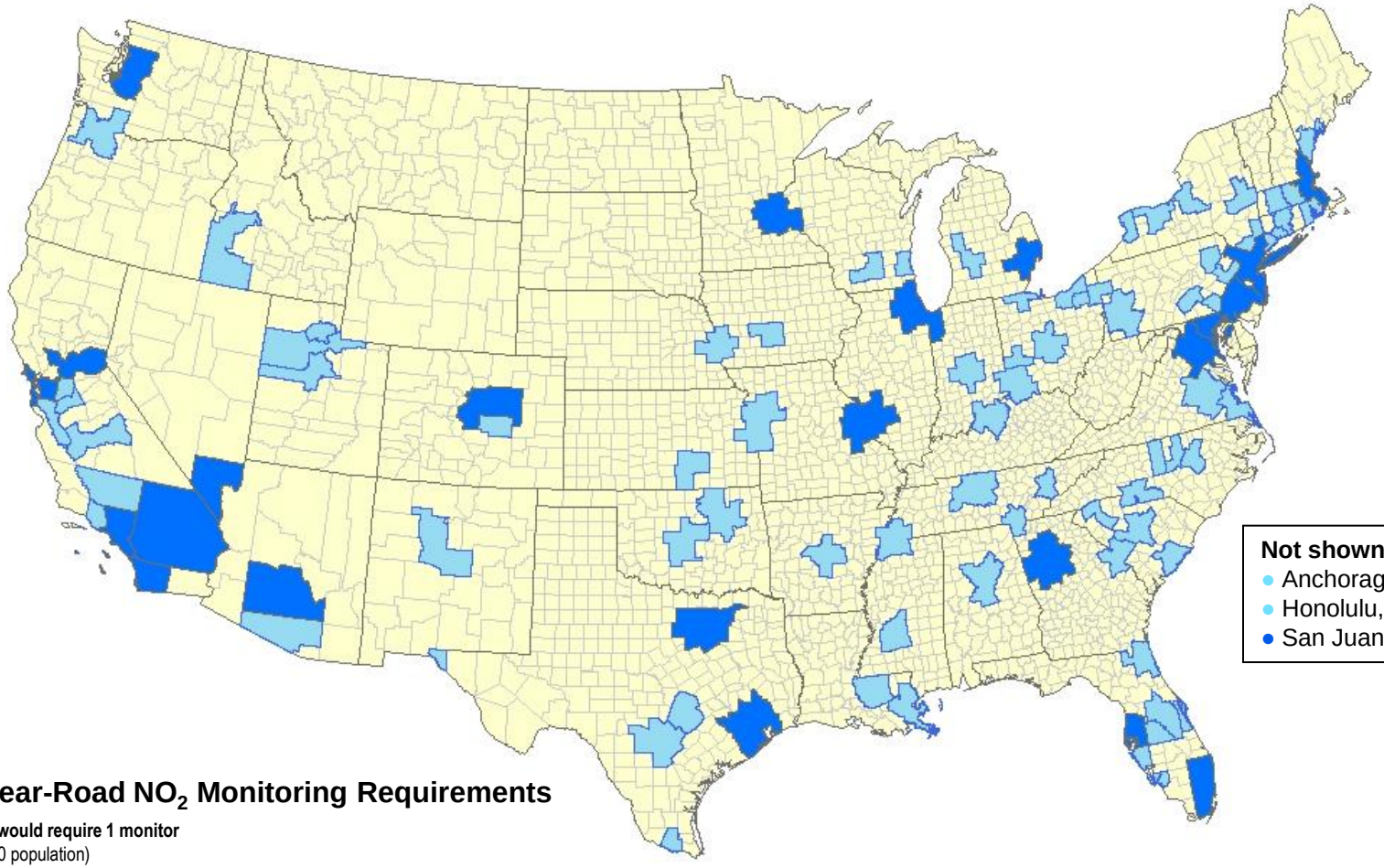
San Juan, PR (not shown) is proposed to have two required monitors.

NO_2 Monitoring Requirements

- EPA finalized a network design to assess peak, short-term NO_2 concentrations, particularly those that occur near heavily trafficked roads, community-wide NO_2 concentrations, and ambient exposures in low income or minority at-risk communities
  - **Near Road (~127 monitors in 103 CBSAs)**
    - At least one monitor would be located near a major road in any urban area with a population greater than or equal to 500,000 people.
    - A second monitor would be required near a major road in areas with either:
      - population greater than or equal to 2.5 million people, or
      - one or more road segments with an annual average daily traffic count greater than or equal to 250,000 vehicles
  - **Area (or Community)-Wide (~53 monitors)**
    - A minimum of one monitor would be placed in any urban area with a population greater than or equal to 1 million people to assess community-wide concentrations
  - **Susceptible and Vulnerable Communities (40 monitors)**
    - Working with the states, EPA Regional Administrators will site at least 40 additional NO_2 monitors to help protect communities that are susceptible and vulnerable to NO_2 -related health effects
- State and local air agencies are to account for required NO_2 monitoring in their annual monitoring plan due July 1, 2012.
- The required NO_2 network is to be fully operational by January 1, 2013.

EPA United States Environmental Protection Agency

Near Road NO_2 Monitors Are Required in 103 Urban Areas



Not shown on map
- Anchorage, Alaska
- Honolulu, Hawaii
- San Juan, Puerto Rico

Minimum Near-Road NO_2 Monitoring Requirements

79 areas would require 1 monitor
(≥ 500,000 population)

24 areas would require 2 monitors
(≥ 2.5 million population or road segments with annual average daily traffic counts ≥ 250,000 vehicles)

127 total monitors

Near-road Implementation Efforts

- EPA is drafting a Technical Assistance Document to assist in the implementation of required near-road NO_2 sites
  - First public draft due May/June 2011
    - Will undergo CASAC – Ambient Air Monitoring and Methods Subcommittee review (possibly in July/August timeframe)
  - Final document expected in Fall of 2011

- A group of volunteer State and local agencies are participating in a near-road pilot study
  - Broward County, FL (Miami CBSA)
  - City of Albuquerque (Albuquerque CBSA)
  - Hillsborough County, FL (Tampa CBSA)
  - Idaho (Boise CBSA)
  - Maryland (Baltimore CBSA)

- State and local experiences are expected to be shared to benefit the air monitoring community regarding implementation issues

SO_2 - Monitoring Network Requirements

- The final monitoring regulations require monitors to be placed in Core Based Statistical Areas (CBSAs) based on a population weighted emissions index for the area . The final rule requires:
  - 3 monitors in CBSAs with index values of 1 million or more;
  - 2 monitors in CBSAs with index values less than 1 million but greater than 100,000; and
  - 1 monitor in CBSAs with index values greater than 5,000.

- An estimated **163** SO_2 monitoring sites nationwide are required by this rulemaking (based on 2005 NEI & 2008 Census estimates).

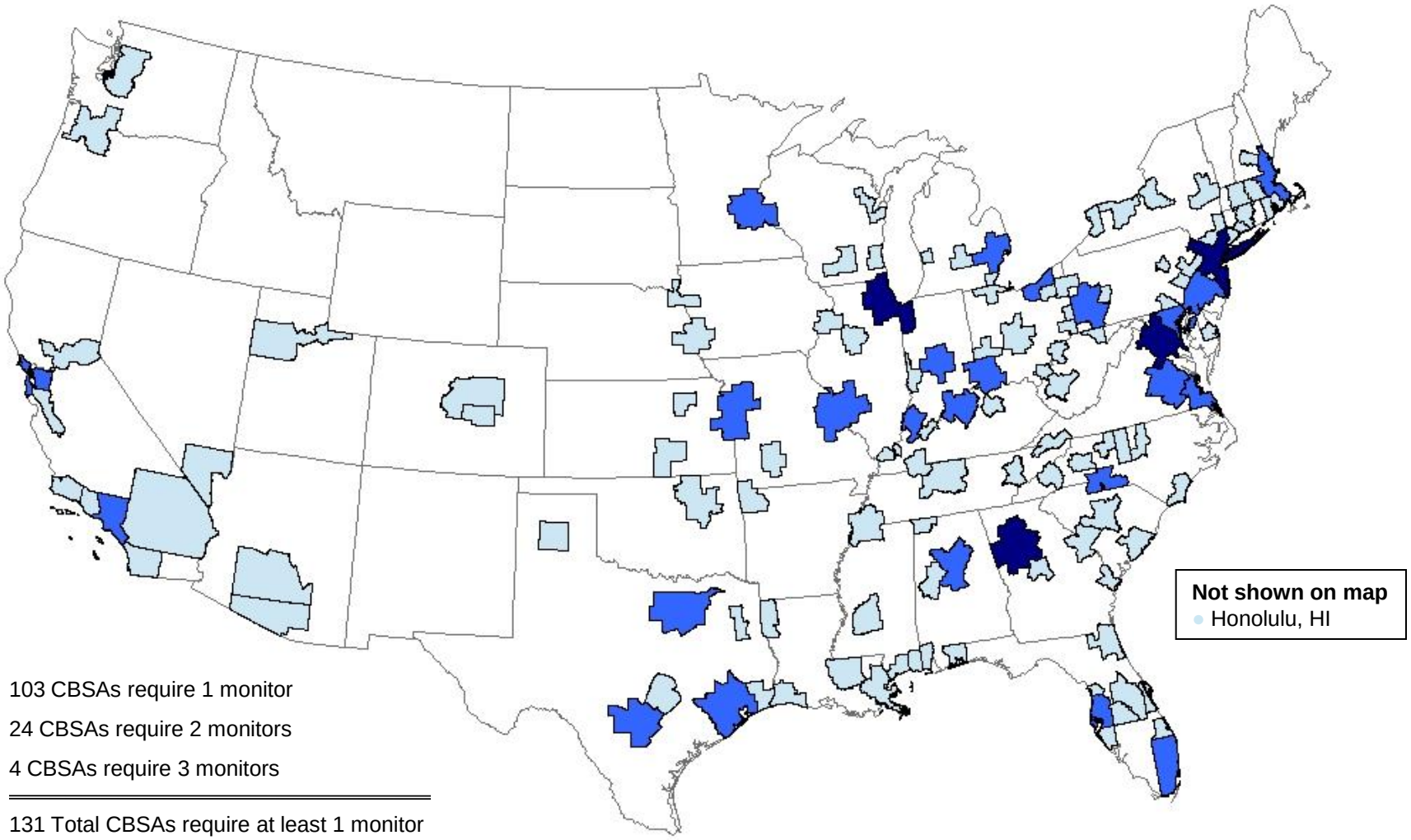
- EPA Regional Administrators have the authority to require additional monitoring in certain circumstances.

- Annual network plans need to reflect state intentions for required SO_2 monitors
- (based on current estimates) in July of 2011. Revisions can made in the July 1, 2012 plan.

- All required SO_2 monitors must be operational by January 1, 2013.

- Updated population weighted emission index values can be calculated upon release of 2008 NEI and 2010 Census data.

Monitoring Requirements for the Revised Primary 1-Hour Sulfur Dioxide (SO_2) Standard



Notes:

1. The number of monitors for each CBSA is based on a population-weighted emissions index.
2. The estimates of required monitors use emissions data from the 2005 National Emissions Inventory and population data from a 2008 Census estimate.

Pb – Recent Monitoring Changes

- Monitoring requirements were finalized December 27, 2010
  - Revised from October 2008 rulemaking
- Three monitoring components:
  - Source oriented
  - Airport specific
  - Non-source oriented (NCore)
- Final rule requires monitoring agencies to submit revised Pb monitoring plans by July 1, 2011 as part of Annual Monitoring Plan submittal
  - Regions and states are evaluating 2008 NEI and monitoring waiver requests
- Final rule requires all new required monitors (source and non-source) be operational by December 27, 2011
  - Based on sampling calendar, the first sample would be required to be collected on December 29, 2011

List of Airports to be Monitored

Airport	County	State
Merrill Field	Anchorage	AK
Pryor Field Regional	Limestone	AL
Palo Alto Airport of Santa Clara County	Santa Clara	CA
McClellan-Pallomar	San Diego	CA
Reid-Hillview	Santa Clara	CA
Gillespie Field	San Diego	CA
San Carlos	San Mateo	CA
Nantucket Memorial	Nantucket	MA
Oakland County International	Oakland	MI
Republic	Suffolk	NY
Brookhaven	Suffolk	NY
Stinson Municipal	Bexar	TX
Northwest Regional	Denton	TX
Harvey Field	Snohomish	WA
Auburn Municipal	King	WA

O_3 - Status of Ozone Monitoring Rule

- Ozone monitoring proposal published July 16, 2009
  - Comments received from Department of Interior, 17 states, multi-state organizations (NACAA, MARC, WESTAR), tribes, citizens.
- NODA with comment published on November 10, 2010 for more recent data from CO, KS, and UT
- EPA is considering relationship of monitoring revisions to the status of the O_3 NAAQS reconsideration process that is underway
- Potential timeline for implementation of any new ozone monitoring requirements could be:
  - Revised ozone seasons effective in 2013
  - Additional ozone monitors (if any) staggered in 2013 and 2014 and perhaps later
- Additional information on rule timing will be communicated as it becomes available

PM NAAQS Review Update

- Policy Assessment Document (PAD) released April 20, 2011
- Key monitoring issues moving forward
  - Role of near-road $PM_{2.5}$ monitoring and associated PM measurements (e.g., ultra-fines)
  - Restrictions on $PM_{2.5}$ monitor comparability that were instituted in 1997
  - Evaluation of FEM testing procedures promulgated in 2006
  - Monitoring framework for characterizing urban visibility
  - Role of $PM_{10-2.5}$ speciation in NCore program (Joann Rice's field study)

Selected AQS Reminders

http://www.epa.gov/ttn/airs/airsaqs/memos/

- Issues for SO2, NO2, and NOy
  - 5-minute SO2 reporting is required as of 8/23/2010; either 5-minute max per hour or all twelve 5-minute averages per hour
  - SO2 and NO2; *Hourly measurements are to be reported to AQS in units of parts per billion (ppb), to at most one place after the decimal, with additional digits to the right being truncated with no further rounding.*
  - [NOy-NO] = parameter code 42612 NOT 42602 since NOy instruments do not report NO2
- Met parameter names

Parameter Code	Old Name	New Name	Old Abbreviation	New Abbreviation
61101	Wind Speed	Wind Speed - Scalar	W S	WS-S
61102	Wind Direction	Wind Direction - Scalar	W D	WD-S
61103	Resultant Speed	Wind Speed - Resultant	R S	WS-R
61104	Resultant Direction	Wind Direction - Resultant	R D	WD-R

Other Noteworthy AAMG Projects

- Sunset Carbon monitor evaluation
  - Beth Oswald
- PAMS Re-engineering (CASAC AMMS May 16-17, 2011)
  - Kevin Cavender
- $PM_{10-2.5}$ speciation field study
  - Joann Rice
- Cooper Multi-metals (Xact) real-time monitor being procured by OAQPS to follow-up on problems discovered during SAT program (1^{st} stop – Harriet Tubman School – Portland OR – PM10 metals)
  - Mike Jones